

# ISO 13168:2015-07 (E)

## Water quality - Simultaneous determination of tritium and carbon 14 activities - Test method using liquid scintillation counting

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Normative references .....	1
3	Symbols, definitions and units .....	2
4	Principle .....	2
5	Reagents and equipment .....	3
5.1	Reagents .....	3
5.1.1	Water for the blank .....	3
5.1.2	Calibration source solutions .....	4
5.1.3	Scintillation solution .....	4
5.1.4	Quenching agent .....	4
5.2	Equipment .....	5
5.2.1	Liquid scintillation counter .....	5
5.2.2	Counting vials .....	5
6	Sampling and samples .....	5
6.1	Sampling .....	5
6.2	Sample storage .....	6
7	Procedure .....	6
7.1	Sample preparation .....	6
7.2	Preparation of the sources to be measured .....	6
7.3	Counting procedure .....	6
7.3.1	General .....	6
7.3.2	Control and calibration .....	6
7.3.3	Measurement conditions .....	7
7.3.4	Interference control .....	8
8	Expression of results .....	8
8.1	General .....	8
8.2	Activity concentration of tritium .....	9
8.3	Activity concentration of carbon 14 .....	9
8.4	Combined standard uncertainty for tritium .....	10
8.5	Combined standard uncertainty for carbon 14 .....	11
8.6	Decision threshold for tritium .....	11
8.7	Decision threshold for carbon 14 .....	11
8.8	Detection limit for tritium .....	12
8.9	Detection limit for carbon 14 .....	12
8.10	Confidence interval limits .....	12
8.11	Calculations using the activity per unit of mass .....	13
9	Test report .....	13
Annex A (informative) Example .....		14
Bibliography .....		16